



Milwaukee Tool
Heavy-Duty, Super Hole Shooter
Model Numbers: 1854-1, 1854-3, 1855-20, 2404-1, 2405-20

Safety Instructions



WARNING!

READ AND UNDERSTAND ALL INSTRUCTIONS
Failure to follow all instructions listed below may result in
electric shock, fire and/or personal injury

GENERAL SAFETY RULES

WORK AREA

- 1. Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
- 2. Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Power tools create sparks which may ignite the dust or fumes.
- 3. Keep bystanders, children, and visitors away while operating a power tool.** Distractions can cause you to lose control. Protect others in the work area from debris such as chips and sparks. Provide barriers or shields as needed.

ELECTRICAL SAFETY

- 4. Grounded tools must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.** If the tools should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.
- 5. Double Insulated tools are equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way.** Double insulation ~O eliminates the

need for the three wire grounded power cord and grounded power supply system.

6. Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is grounded.

7. Don't expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.

8. Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.

9. When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W". These cords are rated for outdoor use and reduce the risk of electric shock.

PERSONAL SAFETY

10. Stay alert, watch what you are doing, and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious personal injury.

11. Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts.

12. Avoid accidental starting. Be sure switch is off before plugging in. Carrying tools with your finger on the switch or plugging in tools with the switch on invites accidents.

13. Remove adjusting keys or wrenches before turning the tool on. A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.

14. Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations.

15. Use safety equipment. Always wear eye protection. Dust mask, nonskid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

WORK AREA

16. Use clamps or other practical way to secure and support the workpiece to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control.

17. **Do not force tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
18. **Do not use tool if switch does not turn it on or off.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
19. **Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool.** Such preventive safety measures reduce the risk of starting the tool accidentally.
20. **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
21. **Maintain tools with care. Keep cutting tools sharp and clean.** Properly maintained tools with sharp cutting edge are less likely to bind and are easier to control. Do not use a damaged tool. Tag damaged tools "Do not use" until repaired.
22. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
23. **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool, may become hazardous when used on another tool.

SERVICE

24. **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
25. **When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual.** Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk of electric shock or injury.

SPECIFIC SAFETY RULES

- 1. Hold tool by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord.** Contact with a "live" wire will make exposed metal parts of tool "live" and shock the operator.
- 2. Maintain labels and nameplates.** These carry important information. If unreadable or missing, contact a MILWAUKEE Service facility for a free replacement.

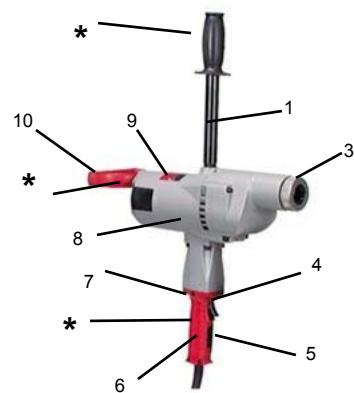
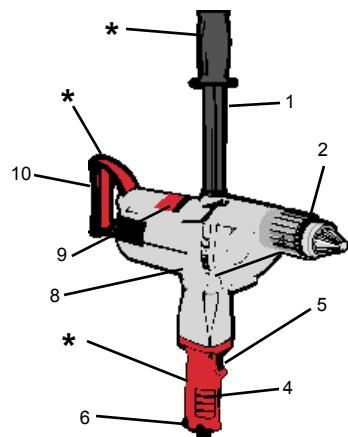
Symbology

	Double Insulated	n_0 <u>xxxx/min.</u>	No Load RPM
	Canadian Standards Association	A	Amps
	Underwriters Laboratories, Inc.	V	Volts
	Alternating Current Only	Hz	Hertz
	Direct Current Only		
	Direct or Alternating Current		

FUNCTIONAL DESCRIPTION

- Pipe Handle
- Chuck (1854-1, 1854-3, 1855-20)
- TMore Taper Socket
- Reversing Switch
- Trigger Switch
- Switch Handle
- Speed Control Dial (1855-20, 2405-20)
- Motor Housing
- Nameplate
- Spade Handle

* Insulated Gripping Surface



GROUNDING



WARNING!

Improperly connecting the grounding wire can result in the risk of electric shock. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the cord or plug is damaged. If damaged, have it repaired by a MILWAUKEE service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

Grounded Tools: Tools with Three Prong Plugs

Tools marked "Grounding Required" have a three wire cord and three prong grounding plug. The plug must be connected to a properly grounded outlet (See Figure A). If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock.

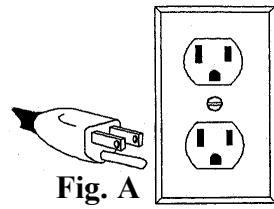


Fig. A

The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the tool's grounding system and must never be attached to an electrically "live" terminal.

Your tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances. The plug and outlet should look like those in Figure A.

Figure B illustrates a temporary adapter available for connecting grounded plugs (Figure A) to two prong outlets. The green rigid ear or lug extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box or receptacle. Simply remove the center screw from the outlet, insert the adapter and reattach the screw through the green grounding ear to the outlet. If in doubt of proper grounding, call a qualified electrician. A temporary adapter should only be used until a properly grounded outlet can be installed by a qualified electrician.

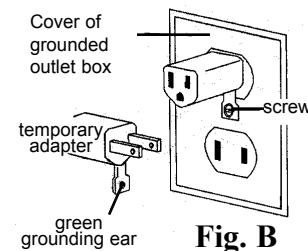
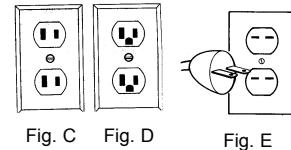


Fig. B

The Canadian Electrical Code prohibits the use of temporary adapters.

Double Insulated Tools: Tools with Two Prong Plugs

Tools marked "Double Insulated" do not require grounding. They have a special double insulation system which satisfies OSHA requirements and complies with the applicable standards of Underwriters' Laboratories, Inc., the Canadian Standard Association and the National Electrical Code. Double Insulated tools may be used in either of the 120 volt outlets shown in Figures C and D or 240 volt as shown in Figure E (1854-3).



EXTENSION CORDS

Grounded tools require a three wire extension cord. Double insulated tools can use either a two or three wire extension cord. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. Refer to the table shown to determine the required minimum wire size.

The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. When using more than one extension cord to make up the total length, be sure each cord contains at least the minimum wire size required. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum wire size.

Guidelines for Using Extension Cords

- ❑ If you are using an extension cord outdoors, be sure it is marked with the suffix "W-A" ("W" in Canada) to indicate that it is acceptable for outdoor use.
- ❑ Be sure your extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified person before using it.
- ❑ Protect your extension cords from sharp objects, excessive heat and damp or wet areas.

Recommended Minimum Wire Gauge for Extension Cords*

Nameplate Amperes	Extension Cord Length					
	25'	50'	75'	100'	150'	200'
0 - 5	16	16	16	14	12	12
5.1 - 8	16	16	14	12	10	--
8.1 - 12	14	14	12	10	--	--
12.1 - 15	12	12	10	10	--	--
15.1 - 20	10	10	10	--	--	--

*Based on limiting the line voltage drop to five volts at 150% of the rated amperes.

READ AND SAVE ALL INSTRUCTIONS FOR FUTURE USE.

SPECIFICATIONS

Tool			Wood				Steel		
	Volts	No Load RPM	Flat Boring Bits	Hole Saws	Auger Bits	Ship Auger Bits	Selfeed Bits	Steel Bit	Carbide Tip Bit
1854-1	120AC/DC	350	1-1/2"	6"	1-1/2"	1-1/2"	4-5/8"	3/4"	1-1/2"
1854-3	120AC/DC	350	1-1/2"	6"	1-1/2"	1-1/2"	4-5/8"	3/4"	1-1/2"
2401-1*	120AC/DC	250	1-1/2"	6"	1-1/2"	1-1/2"	4-5/8"	1-1/4"	1-1/2"
1855-20	240AC	85-350	1-1/2"	6"	1-1/2"	1-1/2"	4-5/8"	3/4"	1-1/2"
2405-20*	120AC	65-250	1-1/2"	6"	1-1/2"	1-1/2"	4-5/8"	1-1/4"	1-1/2"

* To adapt a 3/4" capacity chuck to Model Nos. 2404-1 or 2405-20 drill with No. 3 Internal Morse Taper Socket, specify Chuck Kit No. 49-22-1550. Kit consists of Chuck No. 48-66-2000 and Arbor No. 48-07-0100.